

WHAT IS CLAIMED IS:

1. A receiver comprising:

a radio frequency mixer;

an intermediate frequency filter;

an amplifier;

a first lowpass analog-to-digital converter directly connected to said amplifier;

a second lowpass analog-to-digital converter directly connected to said amplifier;

and

a digital signal processor connected to said first and second lowpass analog-to-digital converters.
2. The receiver according to claim 1 wherein said receiver forms a part of a communications device.
3. The receiver according to claim 2 wherein said communications device comprises a cellular phone.
4. The receiver according to claim 2 wherein said communications device comprises a wireless device.
5. The receiver according to claim 2 wherein said communications device comprises a code division multiple access (CDMA) device.

6. The receiver according to claim 2 wherein said communications device comprises a time division multiple access (TDMA) device.
7. The receiver according to claim 1 further comprising a radio frequency filter.
8. The receiver according to claim 7 wherein said radio frequency filter comprises a surface acoustic wave filter.
9. The receiver according to claim 1 wherein said intermediate frequency filter comprises a surface acoustic wave filter.
10. The receiver according to claim 1 wherein said amplifier comprises a variable gain amplifier.
11. The receiver according to claim 1 wherein said first and second lowpass analog-to-digital converters comprise Sigma Delta analog-to-digital converters.
12. The receiver according to claim 1 wherein said first lowpass analog-to-digital converter comprises a flash-type analog-to-digital converter.
13. A method for direct sampling of an intermediate frequency signal in a receiver comprising:
- receiving a signal;

converting said signal to an intermediate frequency signal;
filtering said intermediate frequency signal;
amplifying said filtered intermediate frequency signal;
directly sampling said amplified intermediate frequency signal; and
processing said directly sampled signal with a digital signal processor.

14. The method according to claim 13 wherein said direct sampling comprises:
sampling a first channel at a predetermined time; and
sampling a second channel a quarter of the intermediate frequency carrier period
after said sampling of said first channel.
15. The method according to claim 13 wherein said direct sampling is accomplished
with a pair of lowpass analog-to-digital converters.
16. The method according to claim 15 wherein said lowpass analog-to-digital
converters comprise Sigma Delta analog-to-digital converters.
17. The method according to claim 13 wherein said direct sampling is accomplished
with a single flash-type lowpass analog-to-digital converter.